

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 - 3 (canceled)

4. (currently amended) A magnetic recording and reading device having a data transfer rate of more than 50 MB/s and a recording density of more than 5 Gb/in<sup>2</sup>, which comprises:

a magnetic recording medium having a substrate and at least one magnetic recording layer formed above the substrate;

a magnetic head enabling the data transfer rate of more than 50 MB/s and the recording density of more than 5 Gb/in<sup>2</sup> on the magnetic recording medium, the magnetic head comprising a recording head having a magnetic core with a magnetic core length l<sub>1</sub> of not more than 35 μm and having a resistivity of more than 50μΩcm, and a reading head provided with a read element having a track width of not more than 0.9 μm; and

a R/W-IC;

wherein the at least one magnetic recording layer contains (1) at least one metal element selected from a first group consisting of Co, Fe and Ni as a primary component, (2) at least two elements selected from a second group consisting of Cr, Mo, W, V, Nb, Ta, Ti, Zr, Hf, Pd, Pt, Rh, Ir and Si, and (3) at least one element selected from a third group consisting of La, Ce, Pr, Nd,

Pm, Sm, Eu, Gd, ~~Td~~ Tb, Dy, Ho, Er, Tm, Yb, Lu, Bi, Sb, Pb, Sn, Ge and B,  
said at least one element selected from the third group being in an amount of  
0.1 to 15 atomic %.

**Claim 5 (canceled)**

6. (previously presented) A magnetic recording and reading device according to claim 4, wherein the R/W-IC has a line width of not more than 0.35  $\mu\text{m}$ .

7. (previously presented) A magnetic recording and reading device according to claim 10, wherein the recording head has a magnetic pole length  $l_2$  of not more than 50  $\mu\text{m}$ .

8. (previously presented) A magnetic recording and reading device according to claim 4, wherein the at least one magnetic recording layer contains amorphous material.

9. (previously presented) A magnetic recording and reading device according to claim 4, wherein the magnetic recording medium further comprises a non-magnetic intermediate layer containing at least one element selected from the group consisting of Ru, Pt, Cr, Mo, W, V, Nb, Ta, Zr, Hf, Ti, Ge, Si, Co, Ni, C and B.

10. (previously presented) A magnetic recording and reading device according to claim 4, wherein the magnetic recording medium has a perpendicular anisotropy magnetic recording layer.

11. (previously presented) A magnetic recording and reading device according to claim 10, wherein the perpendicular anisotropy magnetic recording layer has a granular structure.

12. (previously presented) A magnetic recording and reading device according to claim 4, wherein the magnetic recording medium is a magnetic disk which is rotatable at a speed in a range of more than 10,000 rpm.

13. (previously presented) A magnetic recording and reading device according to claim 4, wherein a magnetic pole of the magnetic core is composed of any one material selected from the group consisting of a NiFe-base alloy and an amorphous alloy, the NiFe-base alloy including 42Ni-57Fe-1Cr, 46Ni-52Fe-2Cr, 43Ni-56Fe-1Mo, 51Ni-47Fe-2S and 54Ni-43Fe-3P, and the amorphous alloy includes CoTaZr and CoNbZr.

14. (currently amended) A magnetic recording and reading device comprising:

a magnetic recording medium having a substrate and at least one thin magnetic recording layer formed above the substrate;

a magnetic head enabling a data transfer rate of more than 50MB/s,

and a recording density of more than 5Gb/in<sup>2</sup> on the magnetic recording medium, the magnetic head having a recording head and a reading head; and

a R/W-IC;

wherein the recording head has an upper magnetic core and a lower magnetic core with a magnetic core length l<sub>1</sub> of not more than 35μm;

wherein the reading head has a read element having a track width of not more than 0.9μm; and

wherein the at least one thin magnetic recording layer includes magnetic crystal grains containing (1) at least one metal element selected from a first group consisting of Co, Fe and Ni as a primary component, (2) at least two elements selected from a second group consisting of Cr, Mo, W, V, Nb, Ta, Ti, Zr, Hf, Pd, Pt, Rh, Ir and Si, and (3) at least one element selected from a third group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, ~~Td~~, Tb, Dy, Ho, Er, Tm, Yb, Lu, Bi, Sb, Pb, Sn, Ge and B, said at least one element selected from the third group being in an amount of 0.1 to 15 atomic %

15. (previously presented) A magnetic recording and reading device according to claim 14, wherein the l<sub>1</sub> is a length between an air-bearing surface of the magnetic core and a connection which connects the upper magnetic core with the lower magnetic core.

16. (previously presented) A magnetic recording and reading device according to claim 14, wherein the RW-IC has a line width of not more than

0.35μm.

17. (previously presented) A magnetic recording and reading device according to claim 14, wherein the magnetic recording medium further comprises a non-magnetic intermediate layer containing at least one element selected from the group consisting of Cr, Mo, W, Ta, V, Nb, Ta, Zr, Hf, Ti, Ge, Si, Co, Ni, C and B.

18. (previously presented) A magnetic recording and reading device comprises:

a magnetic recording medium having a substrate and a thin magnetic layer formed above the substrate;

a magnetic head having a recording head and a reading head; and

a RW-IC;

wherein the recording head has an upper magnetic core and a lower magnetic core with a magnetic core length  $l_1$  of not more than 35 μm;

wherein the reading head has a read element having a track width of not more than 0.9μm;

wherein an absolute value of normalized noise coefficient per recording density of the magnetic recording medium is not more than  $2.5 \times 10^{-8} (\mu\text{Vrms})(\text{inch})^{0.5}/(\mu\text{Vpp})$ ; and

wherein a data transfer rate of the device is more than 50MB/s, and a recording density is more than 5Gb/in<sup>2</sup>.

19. (previously presented) A magnetic recording and reading device according to claim 18, wherein the RW-IC has a line width of not more than 0.35μm.

20. (previously presented) A magnetic recording and reading device according to claim 18, wherein the thin magnetic layer includes magnetic crystal grains.

21. (previously presented) A magnetic recording and reading device according to claim 18, wherein the thin magnetic layer includes amorphous magnetic material.

22. (previously presented) A magnetic recording and reading device according to claim 18, wherein the thin magnetic recording layer is a granular type medium.

23. (previously presented) A magnetic recording and reading device according to claim 18, further comprising a rotary type actuator to position the magnetic head in at least two stages.

24. (previously presented) A magnetic recording and reading device according to claim 4, wherein the at least one magnetic recording layer enables reproduction therefrom.

25. (previously presented) A magnetic recording and reading device according to claim 14, wherein the at least one thin magnetic recording layer enables reproduction therefrom.